Transient Loss of Power of Accommodation in 1 Eye Following Inferior Alveolar Nerve Block: Report of 2 Cases

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ABSTRACT

Unintended intravascular injection from inferior alveolar nerve blocks can result in frustrating distant complications affecting such structures as the middle ear and eyes. Possible complications affecting the eyes include blurring of vision, diplopia, mydriasis, palpebral ptosis and amaurosis (temporary or permanent). In this article, we present a complication that has been reported only rarely. Two patients developed transient loss of power of accommodation of the eye resulting in blurred vision after routine inferior alveolar nerve blocks on the ipsilateral side. Clear vision returned within 10–15 minutes after completion of the blocks. The possible explanation for this phenomenon is accidental injection into the neurovascular bundle of local anesthetic agents, which were carried via the blood to the orbital region. This resulted in paralysis of a branch of cranial nerve III, the short ciliary nerves that innervate the ciliary muscle, which controls accommodation.

MeSH Key Words: anesthesia, dental/adverse effects; diplopia/chemically induced; eye/drug effects

The administration of local anesthetic is one of the most common procedures in dentistry. Hundreds of thousands of anesthetic agents are injected daily without serious complications. Nevertheless, this procedure carries the risk of a number of potential complications for the patient, which can be classified as local, distant or systemic.

Localized complications include separation of the needle, hyperesthesia or a burning sensation during injection, persistent post-injection paresthesia, hematoma formation that may result in trismus or infection, sloughing of tissues, postanesthetic intraoral lesions and self-inflicted soft-tissue trauma (e.g., cheek biting). Hyperesthesia during injection may be a result of accidental injection into the neurovascular bundle.

Other nerves may also be affected by intraoral local anesthesia injection. Facial nerve paralysis will occur if cranial nerve (CN) VII is affected. There are also reports of trauma to both lingual nerve and chorda tympani after inferior dental injections. These accidents have resulted in permanent alteration of sensation in the lingual nerve, inferior alveolar nerve or both.

Structures further from the oral cavity, including the middle ear and the eye, can also be affected by intraoral local anesthesia. Distant complications to the eye have been reported more frequently than middle-ear...